

VSL Surface mount type series

- Low ESR, High ripple current
- Load life of 5,000h at 105°C



SPECIFICATIONS

Items	Characteristics	
Temperature range	-55 to +105°C	
Rated voltage range	2.5 to 25Vdc	
Capacitance range	6.8 to 1,500µF	
Capacitance tolerance	±20% [M] (at 20°C, 120Hz)	
Tangent of loss angle	Less than or equal to the value of Standard Ratings (at 20°C, 120Hz)	
Leakage current	Less than or equal to the value of Standard Ratings (at 20°C, after 2 minutes)	
ESR	Less than or equal to the value of Standard Ratings	
Characteristics of impedance	Z _{+105°C} /Z _{+20°C} ≤ 1.25, Z _{-55°C} /Z _{+20°C} ≤ 1.25 at 100kHz	
Endurance	105°C, 5,000 hrs at rated voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
Damp Heat (Steady State)	60°C, 90 to 95% RH, 1,000 hrs, No-applied Voltage	
	Appearance	No significant damage
	Capacitance change	Within±20% of the initial value
	Tangent of loss angle (tanδ)	≤150% of the initial specified value
	ESR(mΩ)	≤150% of the initial specified value
Resistance to soldering heat	VPS (230°C, 75s)	
	Appearance	No significant damage
	Capacitance change	Within±10% of the initial value
	Tangent of loss angle (tanδ)	≤130% of the initial specified value
	ESR(mΩ)	≤130% of the initial specified value
	Leakage current	
	≤The initial specified value	

*In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

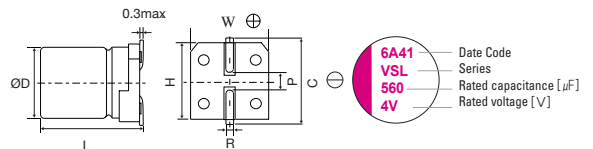
SIZE LIST

(unit : mm)

µF	RV(sv)	2.5 (3.3)	4 (5.2)	6.3 (8.2)	10 (11.5)	16 (18.4)	20 (23.0)	25 (28.7)
6.8								6.3 x 5.9
10							5 x 5.9	8 x 6.9
15						5 x 5.9		
22						5 x 5.9	6.3 x 5.9	10 x 7.9
27							6.3 x 5.9	
33					5 x 5.9		8 x 6.9	8 x 11.9
39		5 x 5.9				6.3 x 5.9		
47				5 x 5.9	6.3x5.9	6.3 x 5.9	8 x 6.9	
56					6.3x5.9	8 x 6.9	10 x 7.9	10 x 12.6
68		5 x 5.9					10 x 7.9	
82				6.3 x 5.9		8 x 6.9		
100				6.3 x 5.9		10 x 7.9	8 x 11.9	8 x 11.9
120				6.3 x 5.9	8 x 6.9			
150		6.3 x 5.9			8 x 6.9 10 x 7.9	10 x 7.9	10 x 12.6	10 x 12.6
180						8 x 11.9 10 x 7.9		
220	6.3 x 5.9			8 x 11.9 10 x 7.9				
270					10 x 7.9			
330			8 x 6.9	10 x 7.9	8 x 11.9 10 x 7.9	10 x 12.6		
470	8 x 6.9			8 x 11.9 10 x 7.9		10 x 12.6		
560		8 x 11.9			10 x 12.6			
680	8 x 11.9	10 x 7.9						
820				10 x 12.6				
1000				10 x 12.6				
1200		10 x 12.6						
1500	10 x 12.6							

*RV : Rated Voltage [V] SV : Surge Voltage [V] (at room temperature)

MARKING AND DIMENSIONS

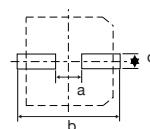


(unit : mm)

Size	φD±0.5	L	W±0.2	H±0.2	C±0.2	R	P±0.2
5 x 5.9	5.0	5.9	5.3	5.3	6.0	0.6 to 0.8	1.4
6.3 x 5.9	6.3	5.9	6.6	6.6	7.3	0.6 to 0.8	2.1
8 x 6.9	8.0	6.9	8.3	8.3	9.0	0.6 to 0.8	3.2
10 x 7.9	10.0	7.9	10.3	10.3	11.0	0.6 to 0.8	4.6
8 x 11.9	8.0	11.9	8.3	8.3	9.0	0.8 to 1.1	3.2
10 x 12.6	10.0	12.6	10.3	10.3	11.0	0.8 to 1.1	4.6

RECOMMENDED LAND PATTERN DIMENSION OF PCB

(unit : mm)



Size	a	b	c
5 x 5.9	1.4	7.4	1.6
6.3 x 5.9	2.1	9.1	1.6
8 x 6.9	2.8	11.1	1.9
10 x 7.9	4.3	13.1	1.9
8 x 11.9	2.8	11.1	1.9
10 x 12.6	4.3	13.1	1.9

Conductive Polymer Aluminum Capacitors

STANDARD RATINGS

Rated Voltage [Vdc]	Rated Capacitance [µF]	Size Φ D x L [mm]	ESR (20°C, 100kHz) [mΩ] [max.]	Rated Ripple Current (105°C, 100kHz) [mA _{rms}]	Tangent of Loss Angel [max.]	Leakage Current [µA, max.]	Part Number
2.5	220	6.3 x 5.9	23	2390	0.10	110	2VSL220MC6
	470	8 x 6.9	23	3300	0.10	235	2VSL470MD7
	680	8 x 11.9	13	4520	0.10	340	2VSL680MD12
	1500	10 x 12.6	12	5440	0.10	750	2VSL1500ME12
4	39	5 x 5.9	70	1100	0.10	78	4VSL39MB6
	68	5 x 5.9	60	1400	0.10	136	4VSL68MB6
	150	6.3 x 5.9	40	1810	0.10	120	4VSL150MC6
	330	8 x 6.9	35	2560	0.10	264	4VSL330MD7
	560	8 x 11.9	13	4520	0.10	448	4VSL560MD12
	680	10 x 7.9	25	3700	0.10	544	4VSL680ME8
	1200	10 x 12.6	12	5440	0.10	960	4VSL1200ME12
6.3	47	5 x 5.9	70	1100	0.10	148	6VSL47MB6
	82	6.3 x 5.9	45	1700	0.10	103	6VSL82MC6
	100	6.3 x 5.9	40	1810	0.10	126	6VSL100MC6
	120	6.3 x 5.9	40	1810	0.10	151	6VSL120MC6
	220	8 x 6.9	35	2560	0.10	277	6VSL220MD7
	220	10 x 7.9	25	3700	0.10	277	6VSL220ME8
	330	10 x 7.9	25	3700	0.10	416	6VSL330ME8
	470	10 x 7.9	25	3700	0.10	592	6VSL470ME8
	470	8 x 11.9	15	4210	0.10	592	6VSL470MD12
	820	10 x 12.6	12	5440	0.10	1033	6VSL820ME12
1000	10 x 12.6	12	5440	0.10	1260	6VSL1000ME12	
10	33	5 x 5.9	70	1100	0.10	165	10VSL33MB6
	47	6.3 x 5.9	50	1620	0.10	94	10VSL47MC6
	56	6.3 x 5.9	45	1700	0.10	112	10VSL56MC6
	120	8 x 6.9	35	2560	0.10	240	10VSL120MD7
	150	8 x 6.9	35	2560	0.10	300	10VSL150MD7
	150	10 x 7.9	30	3020	0.10	300	10VSL150ME8
	270	10 x 7.9	25	3700	0.10	540	10VSL270ME8
	330	8 x 11.9	17	3950	0.10	660	10VSL330MD12
	330	10 x 7.9	25	3700	0.10	660	10VSL330ME8
560	10 x 12.6	13	5230	0.10	1120	10VSL560ME12	
16	15	5 x 5.9	120	1020	0.10	120	16VSL15MB6
	22	5 x 5.9	90	1060	0.10	176	16VSL22MB6
	39	6.3 x 5.9	50	1620	0.10	125	16VSL39MC6
	47	6.3 x 5.9	50	1620	0.10	150	16VSL47MC6
	56	8 x 6.9	45	1890	0.10	179	16VSL56MD7
	82	8 x 6.9	40	2120	0.10	262	16VSL82MD7
	100	10 x 7.9	35	2670	0.10	320	16VSL100ME8
	150	10 x 7.9	30	3020	0.10	480	16VSL150ME8
	180	8 x 11.9	20	3640	0.10	576	16VSL180MD12
	180	10 x 7.9	30	3020	0.10	576	16VSL180ME8
	330	10 x 12.6	16	4720	0.10	1056	16VSL330ME12
470	10 x 12.6	16	4720	0.10	1504	16VSL470ME12	
20	10	5 x 5.9	120	1020	0.10	100	20VSL10MB6
	22	6.3 x 5.9	60	1450	0.10	88	20VSL22MC6
	27	6.3 x 5.9	60	1450	0.10	108	20VSL27MC6
	33	8 x 6.9	45	1890	0.10	132	20VSL33MD7
	47	8 x 6.9	45	1890	0.10	188	20VSL47MD7
	56	10 x 7.9	40	2400	0.10	224	20VSL56ME8
	68	10 x 7.9	40	2400	0.10	272	20VSL68ME8
	100	8 x 11.9	24	3320	0.10	400	20VSL100MD12
150	10 x 12.6	20	4320	0.10	600	20VSL150ME12	
25	6.8	6.3 x 5.9	80	1200	0.10	85	25VSL6R8MC6
	10	8 x 6.9	60	1500	0.10	125	25VSL10MD7
	22	10 x 7.9	50	2000	0.10	275	25VSL22ME8
	33	8 x 11.9	30	2980	0.10	413	25VSL33MD12
	56	10 x 12.6	28	3800	0.10	700	25VSL56ME12
	100	8 x 11.9	30	3320	0.10	500	25VSL100MD12
150	10 x 12.6	25	4320	0.10	750	25VSL150ME12	

